

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A weldable fastener for welding to a metal surface comprising:

a fastener head having a first head thickness between a head top surface and head bottom surface;

an externally threaded shank disposed on the top surface; and

an annular weldment area disposed on the bottom surface having a second head thickness between the head bottom surface and a flat annular weldment surface, said second head thickness being ~~less than 50%~~ between about 20% to about 35% of the first head thickness, wherein said annular weldment area, said bottom surface, and metal surface define a non-welded cavity upon [[the]] welding of said annular weldment area to the metal surface.

2. (Previously Presented) The weldable fastener according to Claim 1 wherein said head has an exterior wall having a first exterior radius and said annular weldment area has a second exterior radius equal to the first exterior radius.

3. (Cancelled)

4. (Previously Presented) The weldable fastener according to Claim 1 wherein said shank comprises a weakened section position adjacent to said head.

5. (Cancelled)

6. (Original) The weldable fastener according to Claim 1 wherein the first head thickness is greater than 1.5 mm.

7. (Original) The weldable fastener according to Claim 1 wherein the first head thickness is greater than 2.0 mm.

8. (Currently Amended) A stud to structure construction comprising:
a weldable fastener having a member having a top surface and a bottom surface with a first thickness there between, and an annular weldment area disposed on the bottom surface having a second thickness between a flat annular weldment surface and the bottom surface which is less than 50% the first thickness;

an externally threaded shank coupled to the top surface; and

an annular weldment disposed between and coupling the weldable fastener to the structure, said annular weldment defining a non-welded cavity between the bottom surface and the structure wherein the threaded shank has a first torsional failure strength, said head has a second torsional failure strength, said annular weldment has a third torsional failure strength, said third torsional failure strength being

greater than the second torsional strength, and said second torsional strength is greater than the first torsional strength.

9. (Cancelled)

10. (Currently Amended) The stud to structure construction according to Claim 8 wherein the ~~member~~ weldable fastener comprises a web portion.

11. (Cancelled)

12. (Cancelled)

13. (Currently Amended) The stud to structure construction according to Claim [[12]] 8 further comprising a nut defining an exterior groove configured to fracture at a fourth failure load, said fourth failure load being less than the ~~third~~ first failure load.

14. (Original) The stud to structure construction according to Claim 10 wherein the structure is a metal laminate.

15. (Original) The stud to structure construction according to Claim 14 wherein the metal laminate comprises a polymer layer.

16. (Original) The stud to structure construction according to Claim 15 wherein the laminate comprises first and second metallic layers, said polymer layer being disposed between the first and second layers.

17. (Previously Presented) The stud to structure construction according to Claim 16 wherein the weldment area is partially disposed between the first and second metallic layers.

18. (Currently Amended) A stud to structure construction comprising:

- a metal laminate comprising a polymer layer disposed between first and second metallic layers;
- a fastener head having a first head thickness and a web portion;
- an annular weldment area having a second head thickness, said second head thickness being less than the first head thickness, said annular weldment area having a first exterior radius, and said fastener head has an exterior wall having a second exterior radius equal to the first exterior radius, and a flat weldment surface prior to welding;
- a solid cylindrical shank coupled to the web portion, said shank having an exterior surface, a portion of the exterior surface being threaded; and
- an annular weldment disposed between and coupling the weldable fastener to the metal laminate, wherein the shank has a first torsional failure load strength, and the web has a second torsional failure load strength greater than the first torsional failure load strength, and wherein the annular weldment has a third torsional

failure load strength greater than the first torsional failure load strength, wherein the weldment is partially disposed between the first and second metallic layers, wherein the polymer layer is within the annular weldment area to laminate interface, and wherein the polymer layer couples the first and second metallic layers, said annular weldment defining a circular cavity defined between the web portion and the laminate.

19 -22. (Cancelled)

23. (Currently Amended) A weld fastener for welding to a metal surface comprising:

a longitudinally elongated shank;

a laterally enlarged head extending from an end of the shank having a head thickness; and

a substantially annular weldment section longitudinally extending from the head opposite the shank, said annular section having a thickness which is 20% to 35% of the head thickness;

wherein a welding surface of the annular section is substantially flat along a lateral plane substantially parallel to a lateral plane of the head, prior to welding, and wherein said annular weldment section defines a circular non-welded cavity between the metal surface and the head upon [[the]] welding of the annular section to the metal surface.

24. (Cancelled)

25. (Original) The weldable fastener according to Claim 23 wherein said head has an exterior wall having a first exterior radius and said annular weldment area has a second exterior radius equal to the first exterior radius.

26. (Previously Presented) The weldable fastener according to Claim 23 wherein the elongated shank is an externally threaded shank.

27. (Previously Presented) The weldable fastener according to Claim 23 wherein said shank comprises a weakened section portion adjacent to said head.

28. (Canceled)

29. (Currently Amended) The weldable fastener according to Claim [[24]] 23 wherein the first thickness is greater than 1.5 mm.

30. (Currently Amended) The weldable fastener according to Claim [[24]] 23 wherein the first thickness is greater than 2.0 mm.

31. (Currently Amended) An automotive vehicle apparatus comprising:
a laminate panel having first and second metallic layers; and
a ring stud arc welded to the laminate panel, wherein the ring stud is welded to the laminate panel by an annular weldment area, wherein the ring stud has a

head with a first thickness and an annular weldment area having a second thickness which is less than 50% the first thickness, wherein the head comprises a web portion and wherein said shank has a first torsional failure load, and the web portion has a second torsional failure load greater than the first torsional failure load, said annular weldment area defining a cavity between the web portion and the laminate panel.

32. (Canceled)

33. (Previously Presented) The automotive vehicle apparatus of Claim 31 wherein the ring stud comprises an externally threaded shank coupled to a head.

34-35. (Cancelled)

36. (Previously Presented) The automotive vehicle apparatus of Claim 31 wherein the annular weldment area to laminate panel interface has a third failure load greater than the first failure load.

37. (Original) The automotive vehicle apparatus of Claim 31 wherein the laminate panel is a metal laminate.

38. (Original) The automotive vehicle apparatus of Claim 37 wherein the metal laminate comprises a polymer layer.

39. (Original) The automotive vehicle apparatus of Claim 38 wherein the laminate comprises first and second metallic layers, said polymer layer being disposed between the first and second layers.

40. (Previously Presented) The automotive vehicle apparatus of Claim 36 wherein the annular weldment area to laminate panel interface is partially disposed between the first and second metallic layers.

41. (Previously Presented) The automotive vehicle apparatus of Claim 38 wherein the polymer layer within the annular weldment area couples the first and second metallic layers.

42-52. (Cancelled)